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Technology Center 2100

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/603,034
Filing Date: June 24, 2003
Appellant(s): CHAYES ET AL.

Himanshu S. Amin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/27/2006 appealing from the Office action

mailed 7/18/2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

"Analysis of gene expression profiles: class discovery and leaf ordering", Ding, Chris H.Q., RECOMB 2002, pages 127-136, April 2002, Washington D.C.; Patent Number 5,819,269 A (Uomini, Robert); "A min-max cut algorithm for graph partitioning and data clustering", Ding et al., ICDM 2001, Proceedings IEEE International Conference, 29 Nov – 2 Dec 2001, pages 107-114.

(9) Grounds of Rejection

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-15,21-30,32-39, and 41-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims do not recite a practical application by producing a physical transformation or producing a useful, concrete, and tangible result. To perform a physical transformation, the claimed invention must transform an article or physical object into a different state or thing.

Transformation of data is not a physical transformation. A useful, concrete, and tangible

result must be either specifically recited in the claim or flow inherently therefrom. To be

useful the claimed invention must establish a specific, substantial, and credible utility.

To be concrete the claimed invention must be able to produce the same results given

the same initial starting conditions. To be tangible the claimed invention must produce a

practical application or real world result. In this case the claims fail to perform a physical

transformation because the claims are directed to operating on data. The claims are

useful and concrete, but they fail to product a tangible result because no results are

stored to computer readable medium or otherwise made tangible by, for example,

reporting the results to a user.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

2.   Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ding ("Analysis of gene expression profiles: class discovery and leaf ordering",

RECOMB 2002, April 2002), in view of Uomini, Patent Number 5,819,269.

        With respect to claim 1, Ding teaches

        "a data reception component that receives and recognizes data relating to a

plurality of newsgroups" (page 3, section 4.1, first paragraph, whereas Ding's internet

newsgroup is equivalent to the claimed component which receives and recognizes

newsgroup data);

        "an engine that constructs a weighted graph" (page 3, section 4, whereas Ding's

first computed and stored in matrix W which defines a weight matrix is equivalent to the

claimed construction of a weighted graph) "with a subset of the newsgroups" (Pages 3-

4, section 4.1, third paragraph, whereas Ding's newsgroup data sets is equivalent to the

claimed subset of newsgroups) "represented as vertices of the graph" (page 3, section

4.1, second paragraph, whereas Ding's nodes are equivalent to vertices) "and ...

represented as edges" (page 3, section 4.1, first paragraph).

        Ding does not explicitly indicate "cross-postings relating to the subset of

newsgroups".

However, Uomini teaches "cross-postings relating to the subset of newsgroups" (column 7, lines 38-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "cross-postings relating to the subset of newsgroups" would have given those skilled in the art the tools to improve the invention by allowing postings to reach more users which may be interested in the message which is posted. This gives the user the advantage of being able to have the ability to reach more users without having to submit a post to every newsgroup individually, as suggested by Uomini (see column 7, lines 18-25 and column 8, lines 1-7).

With respect to claim 2,

Ding does not explicitly indicate "a search engine".

However, Uomini teaches "A search engine" (column 6, lines 55-65, whereas messages from server are filtered is equivalent to the claimed search engine).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "a search engine" would have given those skilled in the art the tools to improve the invention by allowing the user to select only that which is of interest. This gives the user the advantage of being able to have the ability to more efficiently find desired information.

With respect to claim 3,

Ding discloses "a segmenting component that segments the weighted graph" (page 3, section 4, second paragraph, whereas Ding's partitioning the graph is equivalent to the claimed segmenting of the weighted graph) "via spectral clustering" (page 1, first paragraph, whereas Ding's spectral graph partitioning is equivalent to the claimed spectral clustering).

With respect to claim 4,

Ding discloses "the segmenting performed as a function of a number of" (page 3, section 4, second paragraph, whereas Ding's partitioning based on certain criteria is equivalent to the claimed segmenting performed as function).

Ding does not explicitly indicate "cross-postings between newsgroups".

Uomini discloses "cross-postings between newsgroups" (column 7, lines 38-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "cross-postings between newsgroups" would have given those skilled in the art the tools to improve the invention by allowing postings to reach more users which may be interested in the message which is posted. This gives the user the advantage of being able to have the ability to reach more users without having to submit a post to every newsgroup individually.

With respect to claim 5,

Ding teaches "the segmenting component partitioning vertices of the weighted graph into segments so that a total number of edges between different segments is substantially minimized" (page 4, section 5, first paragraph, and figure 1 description, whereas Ding's principle component analysis to reduce the data is equivalent to the claimed total number of edges is substantially minimized).

With respect to claim 6,

Ding teaches "the segmenting component partitions segments recursively" (page 4, section 4.2, whereas Ding's recursive clustering by examining leaf nodes until none can be further partitioned is equivalent to the claimed partitioning of segments recursively).

With respect to claim 7,

Ding teaches "a post-processing component that merges a first cluster into a second cluster" (page 3, section 4, first paragraph, whereas Ding's merging clusters is equivalent to the claimed merging of first cluster into second cluster) " if a sum of weights between the clusters" (page 3, section 4.1, first paragraph) "is greater than a threshold" (page 4, section 4.2, second paragraph).

With respect to claim 8,

Ding teaches "the threshold being a function of sum of weights of an edge adjacent to the first cluster" (page 3, section 4.1, whereas Ding's sum of edge weights is equivalent to the claimed sum of weights of an edge).

With respect to claim 9,

Ding teaches "two clusters are merged" (page 3, section 4, first paragraph, whereas Ding's merging clusters is equivalent to the claimed clusters are merged) "when sum of the weights of edges between a first cluster and a second cluster is more than half of a sum of weights of edges adjacent to the first cluster" (page 3, section 4.1, first paragraph, whereas Ding's sum of edge weights is equivalent to the claimed sum of the weights of edges).

With respect to claim 10,

Ding teaches "a filtering component that facilitates excluding particular newsgroups from being represented in the weighted graph so as to facilitate reducing the size of the graph" (page 3, section 4.1, first paragraph, whereas Ding's internet newsgroup is equivalent to the claimed newsgroups, and page 4, section 5, first paragraph, and figure 1 description, whereas Ding's principle component analysis to reduce the data is equivalent to the claimed excluding to facilitate reducing the graph size).

With respect to claim 11,

Ding does not explicitly indicate "the filtering component excludes newsgroups which do not contain a threshold number of postings".

However, Uomini discloses "the filtering component excludes newsgroups which do not contain a threshold number of postings" (column 6, lines 44-54, whereas Uomini's module for filtering newsgroups is equivalent to the claimed filtering component which excludes newsgroups and column 3, lines 40-60, whereas Uomini's too few messages is equivalent to the claimed not containing a threshold number of postings).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "the filtering component excludes newsgroups which do not contain a threshold number of postings" would have given those skilled in the art the tools to improve the invention by reducing the number of newsgroups which have to be processed. This gives the user the advantage of being able to have the ability filter out newsgroups which are of little use due to their few postings.

With respect to claim 12,

Ding does not explicitly indicate "the filtering component excludes newsgroups by utilizing an implicitly trained classifier that infers the type of newsgroup desired by a user".

However, Uomini discloses "the filtering component excludes newsgroups by utilizing an implicitly trained classifier that infers the type of newsgroup desired by a

user" (column 7, lines 57-67, whereas Uomini's user gathering messages from subscribed newsgroups is equivalent to the claimed exclusion of newsgroups by trained classifier).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "the filtering component excludes newsgroups by utilizing an implicitly trained classifier that infers the type of newsgroup desired by a user" would have given those skilled in the art the tools to improve the invention by reducing the number of newsgroups which have to be processed. This gives the user the advantage of being able to have the ability filter out newsgroups which are of little interest.

With respect to claim 13,

Ding teaches "a paring component that trims edges of the weighted graph with weight less than a threshold weight" (page 4, section 5, first paragraph, and figure 1 description, whereas Ding's principle component analysis to reduce the data is equivalent to the claimed trimming edges with weight less than threshold).

With respect to claim 14,

Ding teaches "the threshold weight is an increasing function of size of the data to be graphed" (page 4, section 4.2, second paragraph, whereas Ding's threshold is equivalent to the claimed threshold weight).

With respect to claim 15,

Ding teaches "the paring component removes vertices" (page 4, section 5, first paragraph, and figure 1 description, whereas Ding's principle component analysis to reduce the data is equivalent to the claimed removing of vertices) "when the vertices are not interconnected by edges to a threshold number of vertices" (page 4, section 4.2, second paragraph, whereas Ding's threshold is equivalent to the claimed threshold weight).

With respect to claim 16,

Ding teaches "upon generation of the weighted graph such weighted graph" (page 3, section 4, whereas Ding's first computed and stored in matrix W which defines a weight matrix is equivalent to the claimed upon generation of the weighted graph).

Ding does not explicitly indicate "is relayed to a data store".

However, Uomini discloses "is relayed to a data store" (column 5, lines 1-15, whereas Uomini's transported and stored in a database).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "is relayed to a data store" would have given those skilled in the art the tools to improve the invention storing the information for later use. This gives the user the advantage of being able to have the ability to view or process the data at a later time.

With respect to claim 17,

Ding does not explicitly indicate "newsgroup data received by the data reception component is relayed to the data store".

However, Uomini discloses "newsgroup data received by the data reception component is relayed to the data store" (column 5, lines 1-15, whereas Uomini's message stored is equivalent to the claimed newsgroup data relayed to data store).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "newsgroup data received by the data reception component is relayed to the data store" would have given those skilled in the art the tools to improve the invention storing the information for later use. This gives the user the advantage of being able to have the ability to view or process the data at a later time.

With respect to claim 18,

Ding teaches "the weighted graph" (page 3, section 4.1, first paragraph).

Ding does not explicitly indicate "outputs ... to a display device".

However, Uomini discloses "outputs ... to a display device" (column 7, lines 55-67, whereas Uomini's displays is equivalent to the claimed to a display device).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "outputs ... to a display device" would have given those skilled in the art the tools to improve the invention allow the user to view the data. This gives the user the advantage of being able to have the ability to see the results the system generated.

With respect to claim 19,

Ding teaches "the weighted graph" (page 3, section 4.1, first paragraph).

Ding does not explicitly indicate "displays ... textually".

However, Uomini discloses "displays ... textually" (column 7, lines 55-67, whereas Uomini's displays is equivalent to the claimed displaying textually).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "displays ... textually" would have given those skilled in the art the tools to improve the invention allow the user to view the data. This gives the user the advantage of being able to have the ability to see the results the system generated.

With respect to claim 20,

Ding does not explicitly indicate "embodied in a computer readable medium".

However, Uomini discloses "embodied in a computer readable medium" (column 5, lines 1-15, whereas Uomini's stored in a news database is equivalent to the claimed computer readable medium).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "embodied in a computer readable medium" would have given those skilled in the art the tools to improve the invention storing the information for later use. This gives the user the advantage of being able to have the ability to view or process the data at a later time.

With respect to claim 21,

Ding teaches "receiving and recognizing data relating to a plurality of newsgroups" (page 3, section 4.1, first paragraph, whereas Ding's internet newsgroup is equivalent to the claimed component which receives and recognizes newsgroup data);

Ding discloses "and constructing a weighted graph" (page 3, section 4, whereas Ding's first computed and stored in matrix W which defines a weight matrix is equivalent to the claimed construction of a weighted graph) "such that newsgroups" (Pages 3-4, section 4.1, third paragraph, whereas Ding's newsgroup data sets is equivalent to the claimed newsgroups) "are represented as vertices" (page 3, section 4.1, second paragraph, whereas Ding's nodes are equivalent to vertices) "and ... are represented as edges" (page 3, section 4.1, first paragraph).

Ding does not explicitly indicate "cross-posts".

However, Uomini teaches "cross-posts" (column 7, lines 38-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "cross-posts" would have given those skilled in the art the tools to improve the invention by allowing postings to reach more users which may be interested in the message which is posted. This gives the user the advantage of being able to have the ability to reach more users without having to submit a post to every newsgroup individually.

With respect to claim 22,

Ding teaches "from the weighted graph" (page 3, section 4.1, first paragraph).

Ding does not explicitly indicate "excluding one or more newsgroups ... when the one or more newsgroups does not contain a threshold of postings".

However, Uomini discloses "excluding one or more newsgroups ... when the one or more newsgroups does not contain a threshold of postings" (column 6, lines 44-54, whereas Uomini's module for filtering newsgroups is equivalent to the claimed excludes one or more newsgroups newsgroup and column 3, lines 40-60, whereas Uomini's too few messages is equivalent to the claimed not containing a threshold number of postings).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "excluding one or more newsgroups ... when the one or more newsgroups does not contain a threshold of postings" would have given those skilled in the art the tools to improve the invention by reducing the number of newsgroups which have to be processed. This gives the user the advantage of being able to have the ability filter out newsgroups which are of little interest.

With respect to claim 23,

Ding teaches "from the weighted graph" (page 3, section 4.1, first paragraph).

Ding does not explicitly indicate "excluding one or more newsgroups ... by utilizing implicitly trained classifiers".

However, Uomini discloses "excluding one or more newsgroups ... by utilizing an implicitly trained classifiers" (column 7, lines 57-67, whereas Uomini's user gathering messages from subscribed newsgroups is equivalent to the claimed exclusion of newsgroups by trained classifier).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "excluding one or more newsgroups ... by utilizing an implicitly trained classifiers" would have given those skilled in the art the tools to improve the invention by reducing the number of newsgroups which have to be processed. This gives the user the advantage of being able to have the ability filter out newsgroups which are of little interest.

With respect to claim 24,

Ding teaches "segmenting the weighted graph into clusters" (page 3, section 4.1, first paragraph, whereas Ding's partitioning the weighted graph is equivalent to the claimed segmenting of the weighted graph).

With respect to claim 25,

Ding teaches "a spectral clustering algorithm is utilized to segment the weighted graph into clusters" (page 1, first paragraph, whereas Ding's spectral graph partitioning is equivalent to the claimed spectral clustering).

With respect to claim 26,

Ding teaches "the spectral clustering algorithm is applied recursively to the weighted graph" (page 4, section 4.2, whereas Ding's recursive clustering by examining leaf nodes until none can be further partitioned is equivalent to the claimed applying the clustering algorithm recursively).

With respect to claim 27, Ding teaches

"calculating vector v by solving an equation Lv=.lambda.Dv, wherein L=D-A is the Laplacian of the adjacency matrix A=(.alpha..sub.ij), D is a diagonal matrix with d.sub.ii=.SIGMA..sub.ja.s- ub.ij, and .lambda. is the second smallest eigenvalue of L; determining maximum and minimum values contained within vector v; dividing an interval between the maximum and minimum values of v into Q smaller intervals; locating a smallest Mcut ratio at endpoints of the Q intervals, wherein S and {overscore (S)} are two segments resulting from a proposed cut, cut=.SIGMA..sub.i.epsilon.S,j.epsilon.{overscore (S)}.alpha..sub.ij, W.sub.S=.SIGMA..sub.i,j.epsilon.S.alpha..sub.ij, and 7 Mcut = cut W S + cut W S _; calculating a minimum Mcut ratio of an integer P eigenvector entries before and after the endpoint found to have a lowest Mcut ratio of the Q intervals; comparing the minimum Mcut ratio of the P eigenvector entries to a threshold t; and segmenting the eigenvector entry where the minimum Mcut ratio is found if the Mcut ratio is less than the threshold t" (pages 3-4, section 4.1).

With respect to claim 28,

Ding teaches "merging the segmented clusters" (page 3, section 4, first paragraph, whereas Ding's merging clusters is equivalent to the claimed merging the clusters) "if the weights of edges between clusters" (page 3, section 4.1, first paragraph, whereas Ding's edge weights is equivalent to the claimed weights of edge) "is greater than a threshold" (page 4, section 4.2, second paragraph).

With respect to claim 29,

Ding teaches "the threshold being a function of sum of weights of an edge adjacent to the first cluster" (page 3, section 4.1, first paragraph, whereas Ding's sum of edge weights is equivalent to the claimed sum of weights of edge).

With respect to claim 30, Ding teaches

"a data reception component that receives data relating to a plurality of newsgroups" (page 3, section 4.1, first paragraph, whereas Ding's internet newsgroup is equivalent to the claimed component which receives and recognizes newsgroup data);

"an engine that constructs a weighted graph" (page 3, section 4, whereas Ding's first computed and stored in matrix W which defines a weight matrix is equivalent to the claimed construction of a weighted graph) "with a subset of the newsgroups" (Pages 3-4, section 4.1, third paragraph, whereas Ding's newsgroup data sets is equivalent to the claimed subset of newsgroups) "represented as vertices of the graph," (page 3, section 4.1, second paragraph, whereas Ding's nodes are equivalent to vertices) "and ... represented as edges" (page 3, section 4.1, first paragraph);

"and further comprising at least one of the following components: a filtering

component that facilitates excluding particular newsgroups from being represented in

the graph so as to facilitate reducing the size of the graph; a paring component that

trims edges of the graph with weight less than a threshold weight so as to facilitate

reducing the size of the graph; a segmenting component that segments the graph via

spectral clustering; and a post-processing component that merges a first cluster into a

segment cluster if a sum of weights between the clusters is greater than a threshold"

(page 3, section 4.1, first paragraph, whereas Ding's internet newsgroup is equivalent to

the claimed newsgroups, and page 4, section 5, first paragraph, and figure 1

description, whereas Ding's principle component analysis to reduce the data is

equivalent to the claimed excluding to facilitate reducing the graph size).

Ding does not explicitly indicate "cross-postings relating to a subset of

newsgroups".

However, Uomini teaches "cross-postings relating to the subset of newsgroups"

(column 7, lines 38-47).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine Ding and Uomini because using the steps "cross-postings relating

to the subset of newsgroups" would have given those skilled in the art the tools to

improve the invention by allowing postings to reach more users which may be interested

in the message which is posted. This gives the user the advantage of being able to

have the ability to reach more users without having to submit a post to every newsgroup

individually.

With respect to claim 31,

Ding does not explicitly indicate "a data store for storing at least one of the following: newsgroup data received by the data reception component; algorithms utilized for segmenting the weighted graph; the weighted graph generated by the graphing engine; and the segmented graph upon the weighted graph being segmented via the segmenting component".

However, Uomini discloses "a data store for storing at least one of the following: newsgroup data received by the data reception component; algorithms utilized for segmenting the weighted graph; the weighted graph generated by the graphing engine; and the segmented graph upon the weighted graph being segmented via the segmenting component" (column 5, lines 1-15, whereas Uomini's message stored is equivalent to the claimed newsgroup data relayed to data store).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "a data store for storing at least one of the following: newsgroup data received by the data reception component; algorithms utilized for segmenting the weighted graph; the weighted graph generated by the graphing engine; and the segmented graph upon the weighted graph being segmented via the segmenting component" would have given those skilled in the art the tools to improve the invention storing the information for later use. This gives the user the advantage of being able to have the ability to view or process the data at a later time.

With respect to claim 32,

Ding teaches "the post-processing component outputting the modified weighted graph" (page 3, section 4, whereas Ding's first computed and stored in matrix W which defines a weight matrix is equivalent to the claimed output of a modified weighted graph).

With respect to claim 33,

Ding does not explicitly indicate "a search engine".

However, Uomini teaches "a search engine" (column 6, lines 55-65, whereas messages from server are filtered is equivalent to the claimed search engine).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "a search engine" would have given those skilled in the art the tools to improve the invention by allowing the user to select only that which is of interest. This gives the user the advantage of being able to have the ability to more efficiently find desired information.

With respect to claim 34,

Ding does not explicitly indicate "a newsgroup browser".

However, Uomini discloses "a newsgroup browser" (column 6, lines 44-54, whereas Uomini's news reader program is equivalent to the claimed newsgroup browser).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine Ding and Uomini because using the steps "a newsgroup browser"

would have given those skilled in the art the tools to improve the invention by allowing

the user to view newsgroup messages. This gives the user the advantage of being able

to have the ability to more efficiently find desired information.

With respect to claim 36-37

These claims are rejected on grounds corresponding to the arguments given

above for rejected claims 33-34 and are similarly rejected.

With respect to claim 39,

Ding teaches "clustering of newsgroups" (page 3, section 4.1, first paragraph).

Ding does not explicitly indicate "related to buying and selling of goods and

services".

However, Uomini discloses "related to buying and selling of goods and services"

(column 1, table 1, whereas Uomini's misc.forsale is equivalent to the claimed related to

buying and selling of goods and services).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine Ding and Uomini because using the steps "related to buying and

selling of goods and services" would have given those skilled in the art the tools to

improve the invention by allowing the user access to information related to commerce.

This gives the user the advantage of being able to be involved in a marketplace.

With respect to claim 40, Ding teaches

"receiving newsgroup data" (page 3, section 4.1, first paragraph, whereas Ding's internet newsgroup is equivalent to the claimed receiving newsgroup data);

"paring" (page 3, section 4, first paragraph, whereas Ding's merging is equivalent to the paring) "edges with weight" (page 3, section 4.1, first paragraph, whereas Ding's edge weights is equivalent to the claimed weights of edge) "below a threshold" (page 4, section 4.2, second paragraph);

"generating a weighted graph" (page 3, section 4, whereas Ding's first computed and stored in matrix W which defines a weight matrix is equivalent to the claimed generation of a weighted graph) "with the newsgroups" (Pages 3-4, section 4.1, third paragraph, whereas Ding's newsgroup data sets is equivalent to the claimed newsgroups) "represented as vertices" (page 3, section 4.1, second paragraph, whereas Ding's nodes are equivalent to vertices) "and the ... represented as edges" (page 3, section 4.1, first paragraph);

"segmenting the graph into clusters" (page 3, section 4.1, first paragraph, whereas Ding's partitioning the weighted graph is equivalent to the claimed segmenting of the weighted graph);

"merging clusters" (page 3, section 4, first paragraph, whereas Ding's merging clusters is equivalent to the claimed merging of first cluster into second cluster) " if the sum of weights between the clusters" (page 3, section 4.1, first paragraph) "is greater than a threshold" (page 4, section 4.2, second paragraph);

"and outputting the graph" (page 3, section 4, second paragraph, whereas Ding's storing the graph is equivalent to the claimed outputting of the graph).

Ding does not explicitly indicate "excluding newsgroups that do not contain a threshold number of postings".

However, Uomini teaches "excluding newsgroups that do not contain a threshold number of postings" (column 6, lines 44-54, whereas Uomini's module for filtering newsgroups is equivalent to the claimed excludes one or more newsgroups newsgroup and column 3, lines 40-60, whereas Uomini's too few messages is equivalent to the claimed not containing a threshold number of postings).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "excluding newsgroups that do not contain a threshold number of postings" would have given those skilled in the art the tools to improve the invention by reducing the number of newsgroups which have to be processed. This gives the user the advantage of being able to have the ability filter out newsgroups which are of little use due to their few postings.

Ding does not explicitly indicate "cross-postings".

However, Uomini discloses "cross-postings" (column 7, lines 38-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "cross-postings" would have given those skilled in the art the tools to improve the invention by allowing postings to reach more users which may be interested in the message which is posted. This

gives the user the advantage of being able to have the ability to reach more users

without having to submit a post to every newsgroup individually.

With respect to claim 41,

This claim is rejected on grounds corresponding to the arguments given above

for rejected claim 1 and is similarly rejected.

With respect to claim 42,

Ding teaches "a weighted graph representative of" (page 3, section 4.1, first

paragraph) "a plurality of newsgroups with a subset of the newsgroups" (Pages 3-4,

section 4.1, third paragraph, whereas Ding's newsgroup data sets is equivalent to the

claimed subset of newsgroups) "represented as vertices of the graph," (page 3, section

4.1, second paragraph, whereas Ding's nodes are equivalent to vertices) " and ...

represented as edges" (page 3, section 4.1, first paragraph).

Ding does not explicitly indicate "a field that stores".

However, Uomini discloses "a field that stores" (column 6, lines 10-30, whereas

Uomini's category stored is equivalent to the claimed field that stores).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine Ding and Uomini because using the steps "a field that stores"

would have given those skilled in the art the tools to improve the invention storing the

information for later use. This gives the user the advantage of being able to have the

ability to view or process the data at a later time.

Ding does not explicitly indicate "cross-postings relating to the subset of newsgroups".

However, Uomini discloses "cross-postings relating to the subset of newsgroups" (column 7, lines 38-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Ding and Uomini because using the steps "cross-postings relating to the subset of newsgroups" would have given those skilled in the art the tools to improve the invention by allowing postings to reach more users which may be interested in the message which is posted. This gives the user the advantage of being able to have the ability to reach more users without having to submit a post to every newsgroup individually.

3.   Claims 35 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ding ("Analysis of gene expression profiles: class discovery and leaf ordering", RECOMB 2002, April 2002), in view of Uomini, Patent Number 5,819,269, and further in view of Gage et al., Patent Number 5,923,846.

With respect to claim 35,

Ding and Uomini do not explicitly indicate "an email program".

However, Gage teaches "an email program " (column 16, lines 22-36, whereas Gage's email system is equivalent to the claimed email program).

It would have been obvious to one of ordinary skill in the art at the time of the

invention to combine Ding and Uomini because using the steps "an email program"

would have given those skilled in the art the tools to improve the invention by allowing

allow data to be downloaded through a publicly accessible network. This gives the user

the advantage of being able to access the system using a widely available standard

email client.

With respect to claim 38,

This claim is rejected on grounds corresponding to the arguments given above

for rejected claim 35 and is similarly rejected.

Response to Arguments

4.   Applicant's arguments filed 4/24/06 have been fully considered but they are not

persuasive.

Applicants argue that Ding and Uomini fail to disclose the claimed limitation "an

engine that constructs a weighted graph with a subset of the newsgroups represented

as vertices of the graph, and cross-postings relating to the subset of newsgroups

represented as edges".

In response, the Examiner respectfully disagrees.

It is submitted that Ding discloses a weighted graph of internet newsgroups

(page 3, section 4.1), and it is well-known that newsgroups consist of postings. Uomini

discloses that "cross-posting" is well known in the art (column 7, lines 38-48). Given that

Ding discusses a weighted graph in relation to newsgroups, as noted above, and

Uomini further discloses cross-posting, it would have been obvious to construct the

graph from postings and cross-postings. The motivation to combine these references is

also apparent from the disclosure by Ding that these concepts were "developed for

internet newsgroup clustering" (page 3, section 4.1).

Accordingly, Ding and Uomini disclose "an engine that constructs a weighted

graph with a subset of the newsgroups represented as vertices of the graph, and cross-

postings relating to the subset of newsgroups represented as edges".

One cannot show nonobviousness by attacking references individually where the

rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413,

208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed.

Cir. 1986).

In response to applicant's argument that Ding and Uomini is nonanalogous art, it

has been held that a prior art reference must either be in the field of applicant's

endeavor or, if not, then be reasonably pertinent to the particular problem with which the

applicant was concerned, in order to be relied upon as a basis for rejection of the

claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir.

1992). In this case, both Ding and Uomini discuss internet newsgroups in relation to

their disclosures, so the argument that they are nonanalogous does not apply in this

case.

(10) Response to Argument

With respect to Applicants arguments regarding the outstanding 35 U.S.C. 101 rejections of claims 1-15,21-30,32-39 and 41-42, it is respectfully submitted that the claims are non-statutory.

Regarding claims 1-15,30,32-39 and 41, which recite system claims, it is not clear that the "data reception component" and the "engine that constructs a weighted graph" (or the "means for" equivalent recited in claim 41) are in fact embodied in hardware and not implemented in software. Without clear indications that the function of the system is contained in hardware, these claims cannot be statutory. Extending upon this fact, the results of software components do not necessarily produce a tangible result. In fact, the only way a result can be made tangible by a software component is by communicating the result to a user or storing the result to a non-volatile media such as a hard drive, removable media, or another type of secondary storage.

Regarding claims 21-29, these claims recite methods which have the same lack of a tangible result as those discussed in the previous paragraph. Unless a method explicitly teaches a tangible result, again by communicating a result to a user or storing the result to a non-volatile media, the claim does not contain statutory subject matter. Applicant argues that the "computer implemented" qualifier sufficiently distinguishes the method and "inherently implies" a tangible result, but it is respectfully submitted that unless the statutory requirements are explicitly stated the claim cannot be statutory. Simply adding "computer implemented still leaves the question of whether the methods are implemented in hardware or software.

Regarding claim 42, the recited "data packet" as it also exists as software and

lacks a tangible result as it fails to communicate a result to a user or store a result to a

non-volatile media.

With respect to the outstanding 35 U.S.C. 103(a) rejections relating to all the

independent claims, and the remaining claims which depend therefrom, Applicants

argue that Ding ("analysis of gene expression profiles: class discovery and leaf

ordering", RECOMB 2002, April 2002) in view of Uomini (US 5,819,269) do not teach

"an engine that constructs a weighted graph with a subset of the newsgroups

represented as vertices of the graph, and cross-postings relating to the subset of

newsgroups represented as edges". Applicant points to a sentence in the Ding

reference, where internet newsgroup clustering is discussed (section 4.1, first

paragraph), but Applicant does not follow through into the next sentence which states:

"given a weighted graph G with weight matrix W". This

In the aforementioned Ding citation (section 4.1, first paragraph), the clustering

method for Internet newsgroup clustering discussed is further explained in another

document previously (co-)authored also by Chris Ding, noted as reference [11]. This

reference ("A min-max cut algorithm for graph partitioning and data clustering", Ding et

al., ICDM 2001, Proceedings IEEE International Conference, 29 Nov-2 Dec 2001,

pages 107-114) ("Ding-2001" hereinafter) is listed in "References Cited by Examiner"

provided with the initial Non-Final Rejection filed on 1/25/2006. Examination of the Ding-

2001 reference for the method discussed in Ding reveals noteworthy discussions about

newsgroup clustering experiments (Ding-2001, section 6). In the experiments, a matrix

is constructed where weights between words in the various postings from a number of

different newsgroups (note that this weight matrix is then manipulated along the lines of

claim 27 in the instant application, although Applicant does not argue the limitations of

this claim). Based on analysis of the Ding-2001 reference, Ding actually discloses a

complete discussion of newsgroups as they relate to weighted graphs. In fact, Ding-

2001 discloses that the words in the document are weighed between documents,

meaning that the vertices are the documents themselves and the edges are similarities

between documents.

Relying on Uomini to disclose that it is well-known in the art that newsgroup

postings can be cross-posted to multiple newsgroups, and in fact each news message

contains this cross posting information, it is noted that the weighted matrix constructed

by Ding-2001 actually can contain the weighted graph claimed in the instant Application

(although with much other extraneous information in the graph not related to cross

posting information). It is therefore respectfully submitted that the weighted matrix (a

representation of a weighted graph) in Ding-2001 is simply a superset of the claimed

weighted graph, and that Uomini provides motivation to focus on one element (cross-

posting information) within the news messages to construct a weighted graph of cross-

postings between newsgroups. This teaches the limitations of the independent claims

argued in this Appeal.

Regarding Applicants argument that there is no motivation to combine Uomini

and Ding, it is respectfully submitted that there is ample motivation for the combination.

As disclosed in the preceding discussion, <u>Ding</u> discusses internet newsgroup clustering

given a weighted graph, which is explained at length in the referenced <u>Ding-2001</u>

reference. <u>Uomini</u> discussed subgrouping in a news network, with references to

newsgroup hierarchies, postings, and the actual structure of newsgroup messages. Any

one of these alone would be sufficient motivation to combine, but is respectfully

submitted that taken as a whole the references are easily combined.

Conclusion:

The references cited disclose the claimed engine that constructs a weighted

graph with a subset of the newsgroups represented as vertices of the graph, and cross-

postings relating to the subset of newsgroups related as edges. In light of the forgoing

arguments, the examiner respectfully requests the honorable Board of Appeals and

Interferences to sustain the rejection.
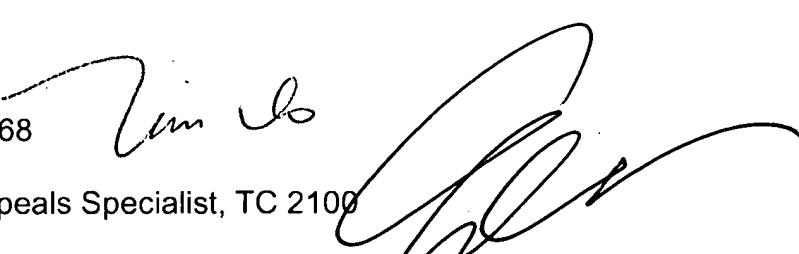

Respectfully submitted,

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February 2, 2007

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EDDIE C. LEE
SUPERVISORY PATENT EXAMINER